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Institutional arrangements for the Sustainable Development Goals

Note by the Secretariat

The Secretariat has the honour to transmit to the Committee of Experts on Public Administration the paper prepared by Committee members Jan Ziekow and Rowena Bethel. The content of the paper and the views expressed therein are those of the authors and do not imply any expression of opinion on the part of the United Nations.

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Institutional arrangements for the Sustainable Development Goals

Summary

Given the integrated nature of the 2030 Agenda for Sustainable Development, the impacts of different policies should not be regarded in isolation, but rather considered with respect to the synergies and trade-offs among all of the Sustainable Development Goals and targets and sustainable development as a whole. The methodological changes that such a holistic approach entails will place significant demands on policy formulation and implementation processes and on political and administrative systems in enhancing capacities to address important interactions among the Goals.

In the present paper, it is argued that, at the level of central government, horizontal policy integration is best suited to the coherence requirements of the Sustainable Development Goals. In procedural terms, this calls for mechanisms able to overcome the sort of fragmentation that results from the silo organization of government, which in turn calls for a mix of arrangements at both the strategic and operational levels. Among these arrangements are various organizational measures involving both government administration and parliaments and entailing, inter alia, budgetary incentives and the training of civil servants.

The national, regional and local levels of government also have to interact with one another in order to achieve comprehensive policy integration. To this end, vertical coordination is required. Dialogue with various stakeholders will be essential, in particular to localize the national sustainable development strategy. A multi-stakeholder approach that includes actors from civil society, businesses, citizens and the scientific community can help to address the integrated and inclusive nature of the Sustainable Development Goals. Steps must be taken in particular to engage vulnerable groups in the discourse to ensure adherence to the principle of leaving no one behind.

In the present paper, it is noted that the qualities inherent in information and communications technologies (ICTs) are aligned with the most effective means by which institutional arrangements may be enhanced, reorganized or adjusted to achieve the 2030 Agenda. ICTs provide important infrastructure in support of institutional arrangements, since they enable collaborative, integrated and coordinated action across public sector agencies and between the public sector and other actors. They also facilitate transparent and accountable government, allow for the harnessing of large amounts of data in policy and planning and provide analytical tools for measuring progress on the Goals and targets, among other features. ICTs are therefore critical enablers of the institutional arrangements underpinning implementation of the 2030 Agenda.

I. Necessary conditions and requirements of institutional arrangements in support of the Sustainable Development Goals

A. From the Millennium Development Goals to the Sustainable Development Goals

1. The United Nations Millennium Declaration, adopted at the Millennium Summit of the United Nations in September 2000, was a milestone on the way towards a more just world. The Declaration committed countries to a new global partnership to reduce extreme poverty and set out a series of time-bound targets with a deadline of 2015, which became known as the Millennium Development Goals.

2. Comprising 8 goals and 18 targets, the Millennium Development Goals were formulated by sector and aimed at improving conditions in developing countries. They therefore prompted changes in sectoral policies to promote progress towards their achievement, in particular in low-income developing countries. Some countries, for example, introduced free primary education to ensure that by 2015, children everywhere, boys and girls alike, would be able to complete a full course of primary schooling. Others called for projects to reduce the proportion of people suffering from hunger, while still others introduced new institutional arrangements to promote targets associated with environmental sustainability. Many developing countries approached the challenge by taking a combination of actions to implement the various goals concurrently, on these fronts and others.

3. The 2030 Agenda for Sustainable Development, adopted at the United Nations Sustainable Development Summit in September 2015, has at its core a set of 17 Sustainable Development Goals and 169 targets. The Sustainable Development Goals expand and build on the achievements of the Millennium Development Goals with a continuing commitment to development priorities such as poverty eradication, health, education, food security and nutrition. Given the specific challenges, in particular in reaching those who are most vulnerable, these processes of sectorally strengthening institutions and policies will likely continue.

4. In its scope, however, the framework of the 2030 Agenda goes far beyond the Millennium Development Goals and pledges common action across a substantially broader policy agenda that sets out a wide range of economic, social and environmental objectives, inter alia, promising peaceful and inclusive societies and defining means of implementation. Importantly, the Sustainable Development Goals are to be taken as integrated and indivisible. In addition, the 2030 Agenda is universal in nature. The Sustainable Development Goals apply to all countries, both developing and developed, and embody a fundamental commitment to leaving no one behind. Moreover, they are inclusive by design, underscore equity and equality as universal aims and stress the essential need for partnership and cooperation among all segments of society and at all levels.

B. Methodological challenges in the implementation of the Sustainable Development Goals

5. Given the integrated nature of the 2030 Agenda, the impacts of different policies should not be regarded in isolation, but rather considered with respect to the synergies and trade-offs among all of the Goals and targets and sustainable development as whole. The systemic changes that such a holistic approach entails will place significant demands on policy formulation and implementation processes, and in particular on political and administrative systems in enhancing capacities to address important interactions among the Sustainable Development Goals and targets.

6. While some Goals are known to correlate strongly with one another and tend to be addressed simultaneously, although not necessarily with the same intensity, other Goals may be related only very weakly or in ways that are difficult to identify. In the case where interlinkages may not be readily apparent, there is an attendant risk of not recognizing possible synergies and trade-offs, which could have important ramifications. To address this problem, it can be helpful to assess potential interactions in two steps.

7. Firstly, the Sustainable Development Goals should be understood as a network of two interlinked levels of objectives, one of Goals and the other of targets. Methodologically, this step draws on principles of network theory in order to identify a set of relationships between Goals and targets that can be used in further analysis, acknowledging that these relationships may vary across and within countries.[1]

8. Secondly, any policy, decision or measure should be assessed with respect to its impact on all other Goals and targets. This means thinking holistically by taking into account all potential effects and all interlinkages among different effects. For example, extending agricultural production may contribute to raising the number of jobs (Goal 8) to address poverty reduction (Goal 1) and reduce hunger (Goal 2), but at the same time can lead to higher demand for energy (Goal 7) and water (Goal 6), with potential conflict over the use of resources (Goal 16) and negative impacts on climate action (Goal 13) and the sustainable use of biodiversity and ecosystem services (Goals 14 and 15). Missing one effect and its interlinkages to other Goals will provide an incomplete picture, with the possibility that none of the Goals concerned will be achieved sustainably.

9. The Sustainable Development Goals require Governments to carefully consider nationally adapted priorities and strategies to achieve them at all institutional levels, including target and policy adaptation, anticipatory policymaking and programme design and the measurement of progress towards achievement of the Goals. The United Nations Development Group summarizes these comprehensive demands on implementation with reference to "mainstreaming", which is described as landing the 2030 Agenda at the national and

[1] See, for example, David Le Blanc, "Towards integration at last? The sustainable development goals as a network of targets", Department of Economic and Social Affairs working paper No. 141 (March 2015). Available from www.un.org/esa/desa/papers/2015/wp141_2015.pdf.

local levels and integrating it into national, subnational and local plans for development and subsequently into budget allocations.[2]

10. The "no one left behind" principle also places high demands on institutional arrangements for the Sustainable Development Goals. There is, first of all, the willingness of Governments to prioritize the principle and align all policies and institutions with it. Governments have to be aware that the needs of all, and especially of marginalized groups, will need an institutionalized mechanism in order to be heard. This could take the form of a dedicated ministerial unit, structural provision for parliamentary work (see section C below), a multi-stakeholder committee (see section E below) or a watchdog function.

11. It is also important to align policymaking with institutional arrangements beyond organizational initiatives. The form such arrangements take will depend on each country's political tradition and culture. In most countries, the creation of a legal framework will be the appropriate measure. The "no one left behind" principle could be linked to such a framework on two levels. Since leaving no one behind should be a guiding concern in all policymaking, the promulgation of the principle could be anchored in a framework law that comprises general guidelines, indicates responsible actors and sets out procedures for its mainstreaming. On another level, special laws could codify specific guidelines for addressing the needs of marginalized and vulnerable groups.

12. Finally, the collection and analysis of statistics should be considered. The use of aggregated data, such as the national average values used with regard to the Millennium Development Goals, does not allow for the differentiated analysis of the status or level of development of different segments of the population. The use of aggregate figures does not make it possible to quantify changes in the situation of vulnerable groups. Therefore, collection of disaggregated data that can enable detailed monitoring of the situation of even small segments of the population should be assured.[3]

C. Horizontal coordination

13. One of the most important institutional arrangements for the Sustainable Development Goals is horizontal coordination. Alongside the term "coordination", there are often references to horizontal integration and occasionally to horizontal coherence. For the purposes of the present paper, the term "horizontal integration" is understood to be the expected result of the Goals, an outcome that includes the different dimensions of sustainable development expressed in the Goals. Horizontal coordination, by contrast, supports horizontal integration and refers to a process that merges different contributions for the overall achievement of the Goals.[4]

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[2] United Nations Development Group, "Mainstreaming the 2030 Agenda for Sustainable Development: reference guide to United Nations country teams" (New York, February 2016), p. 9. Available from https://undg.org/wp-content/uploads/2015/10/UNDG-Mainstreaming-the-2030-Agenda-Reference-Guide-Final-1-February-2016.pdf.

[3] Ibid., pp. 77 ff.

[4] Evert Meijers and Dominic Stead, "Policy integration: what does it mean and how can it be achieved? A multi-disciplinary review", paper presented at the Berlin Conference on the Human Dimensions of Global Environmental Change, Berlin, 3 and 4 December 2004, pp. 4 ff. Available from http://userpage.fu-berlin.de/ffu/akumwelt/bc2004/download/meijers_stead_f.pdf.

14. A primary challenge for institutional arrangements is fragmentation and narrow perspectives caused by organizational silos in government. In policymaking, this can lead to the neglect of aspects that fall outside the respective sectoral functions. A common means of coordinating silo-based organizations is through a form of negative coordination, in which organizational entities examine an initiative strictly from the perspective of their own jurisdiction.[5] The need to minimize the negative effects of the segregation of policy domains is widely accepted and has long been a point of discussion in connection with policy integration. In practice, however, policy integration has proven to be a challenge.

15. To a considerable degree, these challenges arise from disincentives to policy integration from the perspective of sectoral actors. The necessity of coordinating policy content with other sectoral institutions, or even of working together jointly, requires a lot of short-term effort, while any successes tend to manifest themselves only in the longer term. Even then, achievements cannot usually be attributed to institutions individually. In addition, budgets are most commonly allocated according to sectoral criteria. The additional expense of horizontal coordination for policy integration may not be supported by the treasury or tax authorities.

16. Such problems notwithstanding, there are good reasons for the sectoral organization of government institutions, among others the expertise of specialized departments, the effectiveness and efficiency of decision-making and clarity of responsibility that comes from an established hierarchy. The Sustainable Development Goals have shifted attention to policy integration. Without effective horizontal coordination, however, the integrated approach of the Goals cannot be taken. The development of new institutional arrangements that do not overstrain the existing sectoral organization and at the same time allow for horizontal coordination is therefore required.

17. The following institutional arrangements among central authorities at the national level may be considered:[6]

(a) A management committee could be established at the level of executive head of the Government. This committee should consist of high-ranking individuals who are responsible for the development of cross-sectoral policies. The central Government (the office of the Prime Minister or equivalent executive body) must hold the presidency. The exclusive assignment of the guiding role to the central Government alone, however, will not lead to horizontal coordination;

(b) For real coordination at the working level, a second committee (a steering group or coordination committee) should be established among the sectoral bodies. The members of this committee should be officials with sufficient rank that they can take on a coordinating role within their sector and at the same time be so positioned within the hierarchy (usually lower) so as to be able to handle both strategic control and questions about the content of policies;

[5] Renate Mayntz and Fritz Scharpf, *Policy-Making in the German Federal Bureaucracy*, (Amsterdam, Elsevier, 1975), p. 147.

[6] Economic and Social Commission for Western Asia, "The institutional framework of sustainable development in the Arab region: integrated planning for the post-2015" (New York, 2015), p. ix ff. Available from http://css.escwa.org.lb/SDPD/3572/3-Institutions.pdf.

(c) While the aforementioned committees should be standing bodies, horizontal coordination will additionally require cross-sectoral project management. For this purpose, cross-organizational working groups can be set up to develop concrete programmes or measures for implementation. Members of these project groups are to be drawn from the sectoral specialists who form the backbone of the organization. By working together in various projects, these specialists will learn to think beyond their own specialization and consider other elements and perspectives;

(d) Lastly, horizontal coordination must be supported by budgetary inducements. These could be, for example, incentives for cross-sectoral policymaking or implementation in the budget or in a joint budget of the sectoral organizations for working in horizontal coordination.

18. It is not possible to arrange effective horizontal coordination simply by applying the top-down principle. Therefore, the practice found in some countries of assigning the responsibility of policy coordination among all relevant actors to one ministry, while the other ministries are responsible for sectoral policies, may not be very promising. Instead, an overarching sustainability strategy that integrates the sectoral perspective of each individual ministry is required. Horizontal coordination has to be aimed at substantive policy integration, which can only be achieved by understanding the joint task undertaken by all of the "silos". A formal coordinating role can support such a policy if the Sustainable Development Goals are given the highest priority at the top level of government. Only the central Government, that is, the office of the President or Prime Minister, could take on the central steering function.

19. Furthermore, sectoral institutions are often embedded in different policy environments and develop different cultures. They therefore may not necessarily be prepared to communicate well within an integrated approach. This fact has to be considered when creating institutional arrangements, as does the education and training of employees. Technology experts typically communicate on a different semantic level than experts in social policy, for example. If silo-like organizations do not have the capacity to engage in integrated approaches, horizontal coordination efforts will be largely unsuccessful.

20. In addition to personnel aspects, an electronic communications structure is needed to enable the collection and analysis of data for the relevant Sustainable Development Goal indicators, promote interoperability in support of horizontal and vertical coordination and facilitate the inclusion of additional stakeholders. The question of information and communications technologies (ICTs) is discussed further below.

21. While the aforementioned horizontal coordination arrangements start with the organization, the facilities, technical equipment and qualified staff are essential to ensuring that policy coordination can be implemented in practice. Of particular importance are performance and impact assessments, which ensure that national sustainable development targets are taken into account in the various programmes of and measures taken by State authorities. Moreover, the application of impact assessments at the project level, for which local authorities are in most cases responsible, would enable nationally developed sustainable development goals to be anchored more firmly at the local level.

22. Although the national government administration will usually bear the main responsibility for the achievement of the Sustainable Development Goals, in many countries the final political decision will lie in the hands of the parliament. Although discussions about the best way to achieve goals are an essential part of the political discourse, the outcome of the political process should be accepted by all of the main stakeholders. The task of formulating national sustainable development strategies should thus be borne jointly by parliament and the Government. In this regard, it is crucial to avoid conflicts between the Government and parliament concerning the adoption and implementation of the Sustainable Development Goals nationally; for this purpose, rules have to be established, at the constitutional level if necessary.

23. Parliaments also engage in the process of achievement of the Goals. The parliament, as the representative of the people, is established to make the needs of people heard so that no one will be left behind. To put this theoretical starting point into practice in parliamentary work and bring the Goals to life, structural reforms may need to be undertaken. One method could be the implementation of quotas for minorities and marginalized groups in general elections, depending on constitutional requirements. Another option could be the establishment of a mixed parliamentary committee with members from various social groups and from among elected representatives. As a watchdog of sorts, this committee could scrutinize and comment on the alignment of all parliamentary drafts with the "no one left behind" principle. It could play a central role in parliamentary discussions and decisions and in the assessment of the impacts of proposed policies on different social groups.

24. Proposals submitted for consideration and debate in parliament are frequently treated using a sectoral model, as they are when discussed by special committees with different expertise. Plenary debates cannot compensate for this silo approach, since they address politics and not policy integration. Nonetheless, coordination with a view to policy integration within parliament could occur in several ways, such as:

(a) By holding joint meetings of parliamentary committees to discuss specific issues, bills or programmes before final decisions are taken;

(b) By establishing a special parliamentary committee that brokers and ensures integrated approaches to the achievement of the Sustainable Development Goals;

(c) By establishing a mixed parliamentary committee with members from various social groups and from among elected representatives;

(d) By mainstreaming the Sustainable Development Goals in budgetary decision-making, given the steering and controlling role of the budget in the actions of government administration.

D. Vertical coordination

25. The primary responsibility for achieving the Sustainable Development Goals lies with national Governments. They must serve as the engine that triggers awareness of the significance of the Goals and repeatedly reminds others of their importance. They must ensure that institutional arrangements for effectively pursuing the Goals are in place. However, even highly developed horizontal

integration mechanisms at the national level will not be enough to ensure awareness and coherence on their own.

26. Subnational levels of government are closer to citizens and often have a better understanding of their needs and particularities. To a great extent, public services are delivered and infrastructure built at the local level. Many policy objectives relevant for the achievement of the Goals are heavily dependent on actions taken at the local level. Local institutions and regional authorities tend to be organized in a more holistic and less sectoral manner than government ministries at the national level. This can facilitate horizontal coordination at the local and regional levels, where it may be possible to gain fundamental insights into how to pursue sustainable development objectives through dialogue with citizens, businesses and civil society actors. Such small-scale discourses can be more flexible, spontaneous and innovative than attempts to include stakeholders in consultations at the national level.[7]

27. Vertical coordination arrangements should be in place to allow for policy integration among national, regional and local governments. However, when there are a large number of municipalities, coordination with every municipality may not be possible. In such cases, it may be advisable to establish coordinating organizations on a voluntarily basis or to make use of an already existing organization that could act as an intermediary for policy integration between the national and the local levels. Such entities can transmit the Sustainable Development Goals from the national to the local level, thus enabling local authorities to develop their own sustainability strategies and goals, in other words, localizing targets.[8] In addition, the national Government should provide advisory services to assist municipalities in the development of their sustainability strategies and orientation towards the national sustainable development goals. The development of local indicators through public discourse with local people, with consideration given to the national level indicators and context, is a suitable method to produce local ownership of the process.

28. In summary, vertical coordination institutional arrangements for the Sustainable Development Goals should:

(a) Empower disadvantaged people and marginalized communities and geographical regions to enable them to participate fully in the economic life of the country;

(b) Promote local ownership, community involvement, local leadership and joint decision-making at the local level;

(c) Use local resources and skills and maximize opportunities for development;

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[7] Ingeborg Niestroy, "Sustainable development goals at the subnational level: roles and good practices for subnational governments", SDPlanNet briefing note (May 2014), p. 4. Available from www.iisd.org/sites/default/files/publications/sdplannet_sub_national_roles.pdf.

[8] See Paul Smoke and Hamish Nixon, "Sharing responsibilities and resources among levels of government: localizing the Sustainable Development Goals", paper for the Department of Economic and Social Affairs (January 2016). Available from http://workspace.unpan.org/sites/Internet/Documents/UNPAN95873.pdf.

(d) Involve local, national and international partnerships between communities, businesses and government to solve problems;

(e) Rely on flexible approaches to respond to changing circumstances at the local, national and international levels.

E. Multi-stakeholder approaches

29. The integrated nature of the Sustainable Development Goals requires common and/or joint efforts of the political powers, government institutions, civil society actors, businesses, common citizens and the scientific community. It is not sufficient to consider only the different experiences, knowledge and views of elected representatives, even at the local level. Moreover, ensuring public involvement through institutional arrangements can strengthen the position of the political leadership vis-à-vis influential sectoral interests.

30. Nonetheless, participation in the discussion regarding the Goals cannot be left only to the aforementioned stakeholders. This would lead to the exclusion of disadvantaged segments of society from discussions on issues of direct relevance to them, their opportunities in life being a main focus of the Goals. A multi-stakeholder approach requires the creation of arenas for structured discourse so that all groups have the maximum opportunity to make their case, with contributions carefully prepared and supporting materials and research gathered.

31. There are several ways of promoting such a dialogue. The most basic option is to conduct stakeholder consultations, which can be done in different ways. The easiest way is the establishment of an electronic consultation platform where proposed strategies, programmes and measures can be introduced and shared for discussion. However, from participation research it is known that such a simple method privileges those who already enjoy a relatively advantageous position. Therefore, in order to produce the highest possible level of ownership among as many stakeholders as possible, preference should be given to the implementation of open consultation forums in multiple locations across the country, with all interested persons having an opportunity to participate.

32. A more sophisticated alternative to basic consultation is the institutionalization of multi-stakeholder bodies in which key stakeholders are represented. The gathering of a variety of perspectives allows such bodies to formulate substantial ideas for integrated and inclusive policymaking. Moreover, their work can be integrated into strategy formulation as well as monitoring and evaluation processes. National councils for sustainable development and similar bodies exist in many countries.[9] The members of these bodies should be stakeholders from different sectors of the economy and civil society. They can also include government officials. A key condition is that these councils have access to the highest levels of ministries and to the head of Government, while remaining independent and not being an instrument of the Government.

[9] See Derek Osborn, Jack Cornforth and Farooq Ullah, "National councils for sustainable development: lessons from the past and present", SDPlanNet briefing note (April 2014). Available from https://www.iisd.org/sites/default/files/publications/sdplannet_lessons_from_the_past.pdf.

33. A third option entails a network-like structure with a lesser degree of institutionalization. Such arrangements can be formed by raising public awareness of the Goals, which can inspire autonomous dialogue among stakeholders; this may be more innovative and effective if conducted fairly and on an equal basis. To ensure this and for the stability of the network, a network governance approach should be adopted by the national, subnational and/or local governments concerned.

34. In addition to the aforementioned instruments of stakeholder inclusion, it may be beneficial to institutionalize partnerships with individual stakeholders or groups of stakeholders who can make key contributions to the achievement of the Goals. These partnerships can be with particular social groups and civil society actors, in particular those involving marginalized groups, as well as Goal-oriented public-private partnerships with private companies.

F. The case of Germany

35. The case of Germany provides an illustration of an institutional architecture for sustainable development, in particular with regard to mechanisms of horizontal and vertical coordination.[10]

36. In Germany, the head of Government, the Federal Chancellery, is responsible for horizontal coordination and for consistently updating the national sustainable development strategy. The Head of the Federal Chancellery presides over the State Secretaries' Committee for Sustainable Development, in which the State secretaries of all ministries are represented. The duties of this political committee are the central steering of the sustainability strategy, the coordination of the relevant programmes and measures of the individual ministries and the development of strategic impulses for government policy.

37. A working group of heads of subdepartments from the working level of all ministries complements this political steering committee at a specialized level. The Federal Chancellery holds the presidency of the working group. The duties of the working group entail the technical preparation and implementation of the resolutions of the State Secretaries' Committee, as well as the coordination of working-level activities relevant to sustainability issues.

38. For parliamentary guidance on the sustainability strategy, the German parliament has established a parliamentary advisory council on sustainable development, whose membership comprises 17 Members of Parliament representing all political groups. The Parliamentary Advisory Council provides opinions and recommendations that contribute to the decisions at the plenary sessions and by expert committees of the parliament and can launch parliamentary initiatives for the incorporation of sustainability aspects in different policies.

39. A sustainability impact assessment is required for all drafts of laws and regulations. This consists of an ex ante evaluation that examines, from a cross-sectoral perspective, the impacts of a planned regulation with regard to

[10] Germany, *Report of the German Federal Government to the High-Level Political Forum on Sustainable Development 2016* (Berlin, July 2016). Available from https://sustainabledevelopment.un.org/content/documents/10686HLPF-Bericht_final_EN.pdf.

sustainability, as well as the Sustainable Development Goals. The draft sustainability impact assessment, conducted by the ministry in charge, is then presented to the Parliamentary Advisory Council, which is responsible for verifying that the sustainability evaluation is in order. In the event that it is found to be lacking, the Council will demand its revision. In a new initiative, the Government of Germany will introduce another element into the legislative process: the introduction of e-participation, whereby all citizens, companies and civil society actors will have the opportunity to comment on bills using electronic means. This will generate a multi-stakeholder discourse that includes different perspectives and reveals different overlooked relationships, connections and/or conflicts of the Sustainable Development Goals.

40. Coordination with the local level takes place in different ways. On the one hand, there is an interministerial working group that works together with local authorities. On the other hand, regional network hubs for sustainability have been established. These hubs are intended primarily to help to link the sustainability initiatives of the three levels: the Federal Government, state governments and local authorities. Furthermore, a service centre has been set up by the responsible Federal Ministry in order to assist local authorities in the development of local sustainability strategies.

41. All institutional arrangements in Germany are based on the national sustainable development strategy. The strategy is reviewed and enhanced at regular intervals every four years. The evaluation process involves an independent peer review conducted by an international team of experts. The results of the peer review, as well as figures from the monitoring and evaluation of the established indicators, are to be contained in the Government's progress report. Citizens have the opportunity to engage in a dialogue on the strategy, conducted through regional conferences throughout Germany. The updated draft of the new sustainability strategy is expected to be published on the Internet, so that anyone can comment on it.

42. The multi-stakeholder approach is institutionally secured by the German Council for Sustainable Development, whose members are drawn from the economic, civil society and scientific sectors, thereby representing the breadth of the three sustainability dimensions. The Council is not bound by any directive and has the duty to contribute to the further development of the national sustainable development strategy and to specify concrete action, as well as possible projects. In this regard, the Council has published recommendations on the further development of the German sustainability architecture for the achievement of the Sustainable Development Goals.[11] An example of an activity of the Council related to non-governmental institutions is the development of the German Sustainability Code, in which private companies can present their sustainability-related activities and report on compliance with 20 established criteria.

[11] German Council for Sustainable Development, "Deutsche Nachhaltigkeits-Architektur und SDGs" (German sustainability architecture and sustainable development goals, May 2015). Available from www.nachhaltigkeitsrat.de/fileadmin/_migrated/media/RNE_Stellungnahme_Deutsche_Nachhaltigkeits-Architektur_und_SDG_26-05-2015.pdf.

II. Information and communications technologies to support institutional arrangements for the Sustainable Development Goals

A. Salient features of effective institutional arrangements in support of the Sustainable Development Goals

43. Having considered the main methodological challenges of the Sustainable Development Goals, it is helpful to take a more in-depth look at the actual mechanics underlying these attributes through the strategic exploitation of ICTs. The Goals specifically invite an analysis of the root causes of poverty and inequality around the three dimensions of social, economic and environmental considerations, setting the fundamental policy foundation for a far more integrated and open public administration than currently exists.

44. It is generally accepted that the machinery of public administration requires significant paradigm shifts in order to meet the simple but impactful ideal of the Sustainable Development Goals, that no one should be left behind. This is the case regardless of whether the shift involves maintaining to some degree the current arrangements, such as silos. The Goals require an understandable, user-friendly public administration framework that looks at each person or stakeholder (real and corporate) that it services, both in a holistic way and from each individual perspective. Additionally, external demands such as those embodied in various multilateral governance standards, including the Financial Sector Assessment Programme of the International Monetary Fund, the anti-money-laundering recommendations of the Financial Action Task Force and the international tax cooperation agenda of the Organization for Economic Cooperation and Development, call for levels of transparency, accessibility and openness regarding the activities of public administration, which have yet to be met by many countries.

45. The authors have acknowledged that the aims of the Sustainable Development Goals are to increase the capacity of the political and administrative systems for the processing of complex demands, recognizing that people and their circumstances inherently present a complex web of consequential influences. However, in order to tackle the issues from which these influences spring, it is important to understand the influences from each stakeholder's perspective. To this end, there is a critical requirement to ensure:

(a) Adequate access to information on how public administration works, policy formulation and decision-making;

(b) Greater facilitation for people to present their perspectives and have an ongoing dialogue with public administrators and policymakers, to support more relevant, useful and impactful results;

(c) Ongoing analyses of people's circumstances in a more bespoke way, which must have a view to both pre-emptive and reactive solutions to ensure sustainability. This would involve analyses of the vast amounts of data, present and potential, capable of producing historical patterns and indicative trends, as well as facilitating predictive solutions that lead to sustainable outcomes;

(d) More targeted and effective use of disaggregated data from public and private sources;

(e) Greater collaboration between and among policymakers and public administration, both horizontally and vertically;

(f) Greater policy coherence.

46. It has been argued that when relating institutional arrangements to development, a correlation exists between weak, missing or perverse institutional arrangements and poverty, inequality and resource degradation.[12] The resulting conclusion is that development should not be viewed as necessarily asking for more institutional arrangements, but rather, as seen above, could also mean new and other institutional arrangements that complement the classic hierarchical model of public and private administration.

B. How information and communications technologies have supported institutional arrangements and their importance for achieving the Sustainable Development Goals

47. In the preceding analysis, the authors established the systemic and structural attributes of the institutional arrangements that would support implementation of the Sustainable Development Goals. In broad terms, the attributes identified are policy coherence, or "horizontal integration"; transparency; process integration, or "horizontal coordination"; accountability; participatory and inclusive governance; and consistency across decision-making, policy formulation and budgeting. This part of the paper looks at how ICT solutions have supported the institutional arrangements that respond to these attributes.

48. In its overall review of the outcomes of the World Summit on the Information Society, the General Assembly noted that the digital economy, defined as the worldwide network of economic activities enabled by ICTs, is an important and growing part of the global economy and that a correlation exists between connectivity and increases in gross domestic product. Member States recognized that ICTs contributed to higher levels of social benefit and inclusion and provided new channels among citizens, businesses and Governments to share and augment knowledge and participate in decisions that affect their lives and work. The Assembly acknowledged ICT-enabled breakthroughs in government, including in the provision of public services, education, health care and employment, as well as in business, agriculture and science, with greater numbers of people having access to services and data that might previously have been out of reach or unaffordable.

49. It is the very ability of ICTs to move the world from vision to action with regard to the Sustainable Development Goals that distinguishes the importance of ICT in the public administration sustainability agenda. ICTs offer real-time virtual collaborative environments that enable people to engage in the conduct of public affairs irrespective of time or distance, providing the means for effective,

[12] Radboud University, Centre for International Development Issues, "Institutions in development: strategies for poverty alleviation, participation and empowerment". Available from www.ru.nl/cidin/research/research_programme/institutional/.

comprehensive and affordable citizen engagement. The technology is complemented by:

(a) The "Internet of Things", involving the interconnection, via the Internet, of computing devices embedded in, for example, animals, buildings and vehicles, enabling them to send and receive data;

(b) Artificial intelligence, that is, the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making and translation between languages;

(c) Cloud computing, which involves the use of a network of remote servers hosted on the Internet to store, manage and process data, rather than a local server or a personal computer;

(d) The harnessing and distillation of vast amounts of data to assist with policy planning and the creation of solutions that may be exploited for both horizontal and vertical coordination;

(e) Data and analytical tools for measuring progress and tools for tracking the status of implementation of the Goals and underlying targets.

50. The above-mentioned data and analytical tools are important for satisfying concerned persons about the implementation of the Sustainable Development Goals, especially at the local level. ICTs, as tools for modernizing the administration of public service delivery, have been mainstreamed into the public governance reform agenda precisely because, for many governments, they provide the infrastructure and platform required to meet the needs of both internal and external stakeholders.

51. It has been argued that ICTs have also been both an important enabler and an initiator of change in institutional arrangements. Firstly, because information is a core component of government institutions, technologies that influence informational resources are seen to trigger institutional change. This has been demonstrated most appreciably in the way in which ICTs have organized information to improve ease of access to public information by actors in the public administration sphere, most notably within various open government data frameworks. It was observed that since information was both a crucial component of policies and an important element of government institutions, the inevitable result was that technology actually induced changes in information patterns that influenced government institutions.

52. Secondly, technologies intrinsically have institutional characteristics and consequently steer institutional change in the direction of controlling the growing complexity of society. Early research in this area indicated that ICT could be regarded as a functional construction to control the growing complexity of society. The characteristics of ICTs that enable this functional construction were highlighted as calculability, control, transparency, communication and virtual reality, and they are attributed to the inherent sociocultural construction of ICTs.[13]

[13] Albert Meijer, "Why don't they listen to us? Reasserting the role of ICT in public administration" (2007), pp. 234-235. Available from www.academia.edu/2739982/Why_dont_they_listen_to_us_Reasserting_the_role_of_ICT_in_Public_Administration.

53. The above-mentioned factors are illustrative of the ways in which ICTs have driven transformation in public administration and related institutional arrangements by their very nature. They therefore may be aligned with the most effective means to enhance, reorganize or adjust institutional arrangements in order to address the 2030 Agenda. While ICTs may not solve all problems, they have been recognized for:

(a) The integrative qualities of the infrastructure they create, which are vital to supporting the whole-of-government, connected, joined-up government approaches to public administration, as they permit connectivity and links between systems and across sectors. They also offer real-time access to information repositories across the public administration machinery;

(b) Their resilience, by creating a virtual operating environment and minimizing risks associated with the collection, storage, custody and movement of physical information assets;

(c) Their dynamism, adaptability and flexibility, which permit system adjustments with comprehensive deployment to reflect changing needs, expectations and circumstances;

(d) Their innovativeness as the ability to offer innovative models for collaboration between actors in the public space, such as social media and one-stop-shop portals, which supports participatory governance, transparency and accountability;

(e) Their effectiveness and efficiency, demonstrated by their ability to accelerate the deployment of solutions.

54. ICTs have also proven to be invaluable in simplifying business processes, within and with government. They create virtual collaboration spaces between agencies, institutions, the public and government and between governments. They reduce time spent on collecting, storing, sharing and analysing information, processing transactions and delivering outcomes. These conditions have been identified as ideal for equipping governments to be participatory, transparent, responsive and accountable.

55. In relation to global initiatives, when the three dimensions of sustainable development are examined, it is evident that they have not only national but also international implications that require countries to improve national e-government initiatives so that, at the international level, the cross-border implications of many national policies may be properly understood, diagnosed and addressed. Sustainable Development Goals 16 and 17 speak to this specifically. At the heart of developing conducive responses, in this context, are the institutional arrangements required for the work to be done. ICTs are the very foundation on which these arrangements may be organized effectively.

56. For many developing countries, including the least developed countries, financing e-government initiatives, among other hurdles such as systemic weaknesses, remains an inhibitor to accelerated enhancements of institutional arrangements conducive to implementation of the Sustainable Development Goals. Possible solutions include:

(a) The open-source approach, by which the source code is available to the general public for use and/or modification from its original design free of charge, which can assist countries in meeting many important software needs;

(b) Effectively plugging into the rich and growing big data global ecosystem, which extracts data from multiple global sources in various sectors and is an important resource for development for all countries. The proliferation of cross-border data collection in the private and non-governmental organization space is enormously useful for countries that lack the capacity to secure the strategic partnerships on a commercial basis to develop their own arrangements;

(c) Digitization of the information repositories that exist in hard-copy format. Such repositories can be significant and include medical, education, church and some government records. Vast repositories of useful historical data exist in many countries: the challenge lies in effectively organizing such data in a manner in which their rich properties may be exploited. Additionally, ongoing digitization exercises to ensure that information registries are accessible and usable for policymaking and planning are encouraged in all countries. The use of cloud computing technologies has significantly reduced the need for the physical storage of servers;

(d) Opening up government information and data sets through policies that permit the use and reuse of government data. This requires the provision of these assets in the appropriate format to facilitate exploitation and use, and would support data disaggregation so vitally important for detailed analysis of subsectors and subgroups of society to support the implementation of the Sustainable Development Goals.

C. Strategic role of development cooperation in strengthening information and communications technologies for sustainable development

57. Work on promoting the effective adoption of ICTs has also contributed to levelling the playing field for many developing countries, including the least developed countries, small island developing States and post-conflict countries, through the technical assistance, knowledge and tools made available by the United Nations system. Without this work, the global digital divide would likely be much wider than it currently is. Through needs assessments and guiding toolkits, national and local capacities could be developed over time to harness the potential of e-government in implementing national development goals and targets and in aligning them with global goals, including the 2030 Agenda.

58. Effectively implementing the Sustainable Development Goals through a comprehensive and consistent take-up of ICTs remains an issue faced by many developing countries, especially those in special situations, such as the least developed countries, small island developing States and post-conflict countries, among others. More specifically, cost, coverage, silo methods of public administration, the inadequate utilization of private-public partnership relationships, inadequate or non-existent open government strategies and an inability to effectively harness vast amounts of data beset these countries, leading to a

development divide. If not addressed as part of the public administration agenda, such a divide will delay the achievement of the Sustainable Development Goal targets in these countries.

59. Concerns remain that many developing countries, despite having invested significant sums in the e-government journey, have yet to realize the desired positive outcomes for conducive institutional arrangements. The enhancement of the institutional arrangements that could result from such investments simply has not taken place to the extent required for implementation of the Sustainable Development Goals or, if they have, they have been short-lived. This is particularly noticeable in the absence of a long-term holistic vision, the lag in the implementation of integrative technologies across sectors, the slow uptake of open data policies and the lack of utilization of data analytics to inform policy decisions.

60. With the wide disparity that exists between countries' respective national e-government strategies, there remains value in continuing to look specifically at the role of ICTs in transforming the dynamics of public administration. This is worthwhile not only for the valuable lessons that can be learned from the experiences of those further along the transformational path, but also for the importance of continually putting a spotlight on the inhibitors that have an adverse impact on the advances made by those that are not as far along the path. This group, predominantly of countries that fall outside of the "developed countries" category, stand to benefit the most from a concerted focus on ICTs in seeking to meet what, for most, is an ambitious 2030 Agenda. The continual assessment of national e-government progress globally as an issue of public policy is essential if the overall international plan to leave no one behind is to be achieved in a meaningful, balanced and fair way across societies.

61. Any discussion on reform within public administration, especially at the implementation stage, would appear incomplete without acknowledging the central role of ICTs in bringing about the desired outcomes. Not only do ICTs permit the assessment and conclusions surrounding the fundamental rules and principles to be cast in practical terms, but their very characteristics mean that they can streamline the functions and processes of very complex, competing considerations, providing the linkages that ultimately produce desirable results. A failure to anchor any discussion in this way could handicap many developing countries from having a holistic understanding of what is best, practically, to implement the Sustainable Development Goals in their own respective contexts using ICTs. This is particularly important as a continuity factor, since often the political actors will change over time and the new actors would benefit from updates on the role of ICTs, what they can do to deliver on the Goals as a longer-term objective, and how this can be done most effectively.

62. Not binding the transformation in public administration to an effective and practical implementation of ICT runs somehow counter to the message that the world is moving from commitment to action with regard to the Sustainable Development Goals. While some may regard the issue of ICTs as more appropriate to a technical discussion, such a view runs the risk that the potential facilitating role of ICTs may be overlooked by Member States when considering how best to implement the Goals as a part of a holistic public administration reform agenda. It is recognized that many countries are and have been engaged in this; however, there

are potential drawbacks for less advanced economies, often enticed by the private sector to adopt ICT solutions in a piecemeal way.

63. Member States will be, and have been, courted by many well-meaning industry players seeking to assist with e-government initiatives; however, evidence has shown that in a number of instances, initiatives have been introduced by ministries or departments as stand-alone efforts. The all-important need to ensure that such an e-government infrastructure is implemented in a way that supports policy coherence, integration and coordination across the public administration system therefore does not necessarily occur. The end result is that in some countries, notwithstanding the investment of many millions of dollars in ICT for e-government, the silo approaches have merely been automated and the integration necessary to improve the user experience overlooked and forgotten.

III. Conclusions

64. The Sustainable Development Goals are designed not only for their achievement, but also to account for the systemic changes that the Goals and ways of achieving them imply. The transformational character of the Goals requires a range of institutional arrangements in order to meet the complex demands of sustainability.

65. At the level of central government institutions, horizontal policy integration is best suited to the coherence requirements of the Sustainable Development Goals. Procedurally, this calls for horizontal coordination mechanisms able to overcome the fragmentation of content-related perspectives that result from the silo organization of government, which in turn calls for a mix of arrangements at both the strategic and operational levels, which include organizational measures as well as the creation of budgetary incentives and the training of civil servants. It is also necessary for parliaments to engage in the process of achievement of the Goals.

66. The national, regional and local levels of government have to interact with one another in order to achieve comprehensive policy integration that cuts across levels. To this end, vertical coordination is required alongside horizontal coordination. The national sustainability strategy has to be the point of reference used to orient integration, above all with the local level, where dialogue with different stakeholders should be used in order to "localize" the national strategy.

67. In addition, a multi-stakeholder approach that includes actors from civil society and businesses, as well as citizens and the scientific community, is required in order to take account of and successfully meet the integrated and inclusive concerns of the Sustainable Development Goals. It is of fundamental importance that the most vulnerable people and disadvantaged segments of society are included in the discourse on the achievement of the Goals to ensure that the strategy developed for achieving them adheres to the principle of leaving no one behind.

68. In some respects, the qualities inherent in ICTs are aligned with the most effective means by which institutional arrangements may be enhanced, reorganized or adjusted to achieve the 2030 Agenda. ICTs are ideally suited to providing the infrastructure necessary to support the institutional arrangements, irrespective of time and distance, that are conducive to the effective implementation of the

Sustainable Development Goals, since they offer solutions for collaborative, integrated and coordinated activities across public sector agencies and between the public sector and outside stakeholders and actors.

69. ICTs also offer open government solutions that make governments transparent and accountable; avenues for engagement between governments and stakeholders; the harnessing and distillation of vast amounts of data to assist with policy planning; and data and analytical tools for measuring progress and tools for tracking the status of implementation of the Sustainable Development Goals and underlying targets. The vital role of ICTs in attaining the Goals must always be a central part of the policy debate on any public administration reform strategy to implement the Goals.

70. Finally, given the preceding analysis, the authors recommend that governments create a robust framework of legal and organizational structures to consistently realize the "no one left behind" principle, strengthen the involvement of local communities and promote inclusive decision-making processes with a view to localizing the Sustainable Development Goals, and continue to adopt ICTs in order to support institutional arrangements that will underpin implementation of the 2030 Agenda.